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THE MAGAZINE OF THE SOCIETY FOR TECHNICAL COMMUNICATION

CONTENT IN THE CUSTOMER EXPERIENCE

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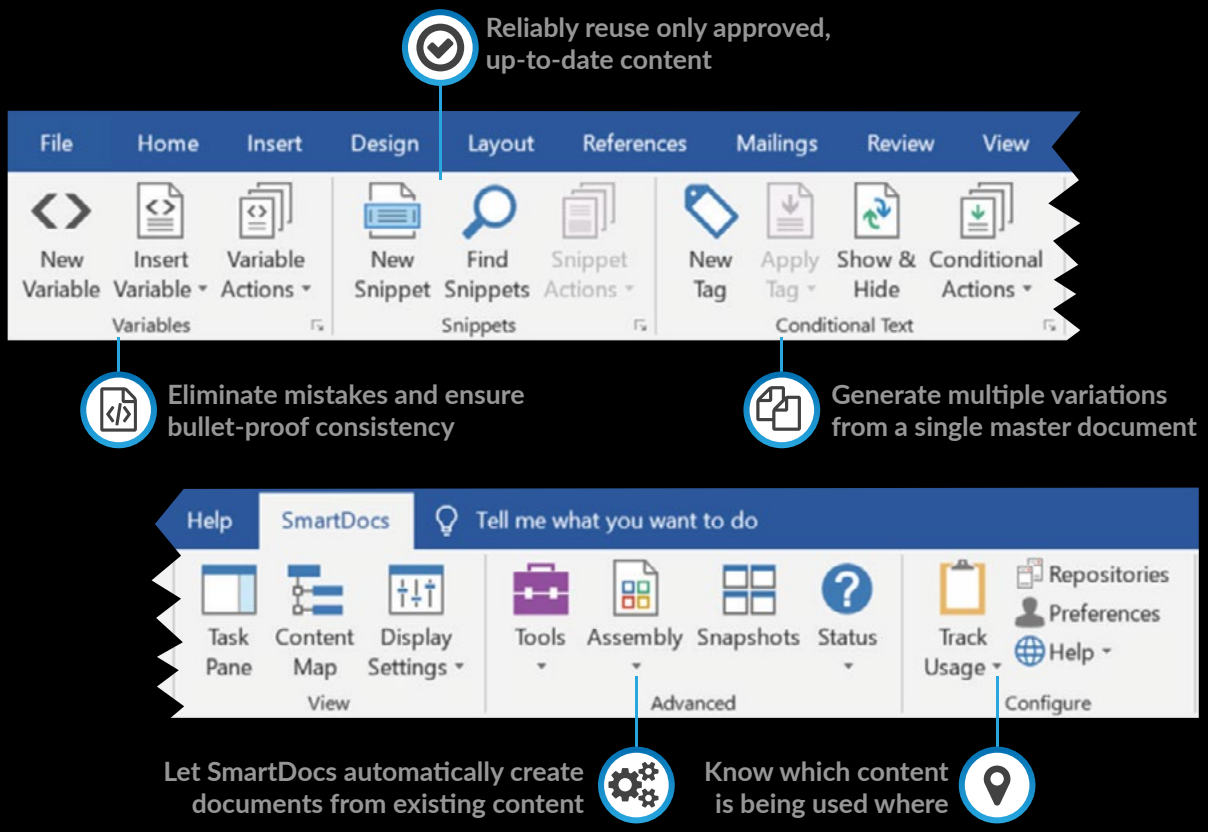

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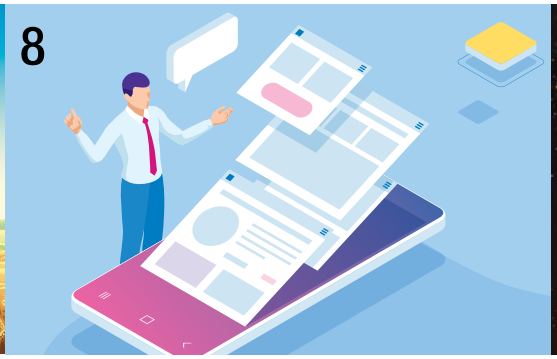

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A Note from the Editor

IF YOU GOOGLE customer experience, you might be disappointed, as I was, to find that Marketing is considered the holders of the keys to customer experience. Not that I begrudge them their role, but really? We want to judge customer experience by your customers' experience with marketing? What's wrong with this picture? Let me count the ways…

- The goal of any business is (or certainly *should* be) converting prospects (the people who are interacting with sales and marketing funnels, materials, and people) to customers—the people who are interacting with products, services, and the experiences around those…to the *post-sales experience*.
- Businesses also want to continue to generate revenue from, not just to sell once to, a customer. The expensive way to continue generating revenue is through customer acquisition—through marketing. The more efficient, higher-profit way is by selling *more* to existing customers.
- Existing customers are not going to buy *more* if they aren't happy with the experience they've already bought. How do we ensure post-sales satisfaction? With excellent products, services, and the experiences around those—not through more or better marketing.

One bright light of my Google-inspired trip down the rabbit hole (because, let's face it, don't we always get off on a tangent when we start researching anything with Google?) was the increasing emphasis on the responsibility for customer experience (in all of its many names) falling squarely on the shoulders of executives and CEOs, according to McKinsey and the Wharton School of Business at the University of Pennsylvania. *And* the seemingly contrary idea that, illustrated by Forbes, overall satisfaction *among all employees* has the greatest impact on customer satisfaction and experience. WHAAT?

It makes sense. Customer experience does not begin and end with marketing. It really requires a holistic approach. And if your customers interact with your employees, their attitudes and behaviors are going to color that interaction—for good or bad.

How does all of this relate to content? As our businesses become more and more digital, we rely more heavily on content to initiate and maintain the relationship with our customers. Content *becomes* the conversation. If that's true, and we strive for our customers to spend most of their relationship in the *post-sales* portion of their journey, what are the implications for *post-sales content* on customer experience?

Through our theme of "Content in the Customer Experience," I hope to inspire you to think about your own role, as a technical content professional, in your company's customer experience. As you read this issue's contributions, consider this: Are your customers wildly successful due to your content?

- How (or is) your content delivering (or better, overdelivering) on your customers' expectations?
- How (or is) your content ensuring that customers are successful in getting value from your organization's offerings?
- Based on their experiences supported by your content, are customers likely to rave about your organization's offerings—advocating for,

evangelizing, and referring others to them?

First up, Liz Herman, Knowledge Management Director at Senture, LLC, discusses customer experience, and the role that content is playing within that experience, in US government agencies. While the past seems bleak for content, perhaps the future bodes better for content in the overall experience.

Danielle Feldman Karr, Marketing Field Programs Manager at Control4, discusses the role that message plays in a customer-centric experience. As you read, consider how customer-centric *your* organization's messaging is.

And in a highly relevant blast from the past, we republish a discussion with Pennsylvania State University Professor John M. Carroll of minimalism fame, as interviewed by Nicky Bleiel, Watson Information Developer at IBM. While this interview was originally published in the February 2013 issue of *Intercom,* the timelessness and relevance of minimalism to this issue's theme, and the 30-year anniversary of the publication of *The Nurnberg Funnel: Designing Minimalist Instruction for Practical Computer Skill,* made this article's revival a must.

As always, we have a great column lineup for you, as well.

- In "Meet the Change Agents," Scott Abel interviews Wouter Maagdenberg, a man on a mission to make "publish to video" as simple and ubiquitous as "save to PDF."
- Cindy Currie and Kit Brown-Hoekstra in "Ask a Manager" provide managers' perspectives on productivity and project kickoffs.
- In "Health and Medical Communication," Kirk St.Amant enlists Anna Lerew-Phillips to provide her insights, tips, and tricks for breaking into medical communication.

In the Society pages, be sure to check out Edward Malone's fascinating memorial to Paul Stanley Kennedy, an OG of STC and its predecessor organizations.

And last, but not least, take a trip to the stars with Todd Thalimer in "Off Hours."

If you are feeling confident about your content in the customer experience—or you want to improve and have questions about how to do that—I encourage you to reach out! We've included author and columnist email addresses so that you can get in touch. My email address is there, too. We would love to discuss with you online the topics and issues raised in this issue, so we hope that you'll ask a question or start or join a conversation!

Until next time: To your customers' wild success!

— Andrea L. Ames
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Customer Experience and Content: THE Field OF Dreams

By DR. LIZ HERMAN | *STC Associate Fellow*

IF YOU'RE FAMILIAR with the 1989 movie *Field of Dreams*, an adaptation of W.P. Kinsella's book *Shoeless Joe*, you may recall that a farmer builds a baseball field in the middle of a cornfield in Iowa and a group of famous heavenly ball players appear and play baseball. The farmer is called to build the field by a voice that says, "If you build it, they will come." He builds it despite the resistance of family and friends and the baseball greats of yore do walk out of the surrounding cornfield to play ball. It is a schmaltzy, but meaningful early example of customer experience (CX). The customer (voice in the cornfield) asks for something and the agent (farmer) complies. All the players (additional customers) have to do is show up. If only CX were that simple.

CX in US Federal Agencies

As a result of President's Management Agenda (PMA) and OMB Circular A-11, federal agencies have come to play ball as it relates to CX. Specifically, the *Customer Experience Cross Agency Priority Goal* from the PMA and Section 280 of OMB Circular A-11, *Managing Customer Experience and Improving Service Delivery*, are driving change. Federal agencies that are considered high-impact service providers (HISPs) are targeted to lead the CX charge. HISPs are federal agencies whose services have a high impact on the public they serve. Think of agencies like the Department of Treasury administering taxpayer services or the Department of Education administering student grants and loans. These public-facing agencies are now tasked with improving CX.

Additional federal agencies that qualify as HISPs, like the United States Department of Veterans Affairs (VA), the United States Department of Agriculture (USDA), and the Centers for Medicare & Medicaid Services, understand the broad tenants of CX. There is genuine interest in improving how their respective veterans, farmers, and beneficiaries access accurate, timely, and consistent content from their agencies. That interest is borne out in updated sets of core values and mission and vision statements, in the creation and appointments of government CX teams and leaders, and in government contracts containing CX, plain language, and content and knowledge management provisions. There is action. Work is being done. There is no way, however, to rubber stamp CX as a quick fix. It requires, at a minimum, a difficult-to-achieve balance of technology modernization, agency adoption, customer engagement, change management, and content and knowledge management. And content still seems to be getting short shrift.

Content: A Minimized Component of CX

According to the Center for Plain Language's 2019 Federal Report Card, only the Social Security Administration received an A grade for writing quality. Most agencies received low Bs, Cs, and Ds, although those grades have been trending slowly upward. Continued reliance on jargon, and an inability to easily locate information because of poor design, exacerbates access issues. Particularly concerning in the report card is the loss of personnel in critical plain language positions due to turnover. Positions that are then slow to backfill. The VA—which established a Veterans Experience Office (VEO), has been recognized for working to improve its customer service, and was long criticized as subpar with several significant news events—changed federal regulations (USC 38 C.F.R Part 0) to include CX principles and the VA's focus of ease, effectiveness, and emotion for all veteran interactions. It is demonstrating commitment to CX, yet in its detailed February 2020 CX VEO presentation that illuminated its data, tools, technology, and engagement core capabilities, content was minimally mentioned and only in the context of how contact center agents greeted callers of its White

House VA Hotline. Content and knowledge management processes, plans, and benefits must show up clearly in these types of material.

While agencies push forward implementing CX solutions, staying the course and including content as a critical element remains a dream. There is acknowledgement that content is important to CX. There is excitement when new portals containing content debut, like Farmers.gov at USDA. There is an overall feeling in CX that "If you build it, they will come." The thing about CX and content is if you build it, it must be maintained. It appears that the maintenance aspect is overlooked in the excitement of getting into and then playing the CX game.

The Field of Dreams still exists in Iowa today. It is still maintained, and 2020 is a big year for the Field of Dreams, as a major league baseball game will be played there later this summer. Like the Field of Dreams, for any content initiative to survive and thrive after the initial excitement around implementation, it requires maintenance. Until agencies truly understand this, and what maintenance entails, CX initiatives will struggle to achieve success. Customers must be able to trust agency content, regardless of how it's accessed. Content must be consistent across the omnichannel environment, enabling customers to receive the same information from a phone call, a chat, an email, or a text. Content is the fulcrum of CX. Customer satisfaction with an agency is carefully balanced on getting the right answer at the right time. If an agency does not invest in maintaining its content, it breaks customers' trust. Once broken, it is incredibly difficult to regain.

A Brighter Future for Content

There are, however, promising developments. The United States General Services Administration (GSA) established the Centers of Excellence (CoE) to assist federal agencies with modernizing systems to obtain efficiencies and promote greater customer satisfaction. Focus on content and knowledge management can be found in the contact center functional area, which is one of six functional areas established by the CoE. USDA was the first agency to partner with the GSA CoE, and as a result of that partnership, a new Ask USDA portal was launched that streamlines points of service for farmers, ranchers, and producers, and curates content from disparate knowledge bases into one content management system containing current, accurate knowledge articles. In its request for proposal for this work, content and knowledge management was explicitly called out by the GSA CoE as a major workstream. The US Department of Housing and Urban Development (HUD) is expected to be the next agency to partner with the GSA CoE and its request for proposal also includes the content and knowledge management workstream. If funded and awarded, HUD customers can expect streamlined points of service, as well, in addition to accurate, timely, and consistent content across the agency.

As is sometimes the case in government procurement, after contracting with a private company to complete the initial implementation of the work, the private company transitions the work back to the government for ongoing operations. Educating agencies on content maintenance is key in these transitions. The amount of work it takes to keep content current is still misunderstood. There remains an overreliance on government subject matter experts (SMEs), who are already wearing multiple hats and stretched thin, to also take on the role of content contributors. There continues to be (dare it be said in an IT modernization environment) too much focus on the technology. Yes, the portal can present an answer as you begin to type your question, but is it the right answer? Would it match the answer if you called the customer help line? Is it accurate, current, timely?

Compounding these issues is overall change fatigue. New initiatives continue to roll out, year after year, by new administration after new administration. What will the CX initiative look like in five years? It can be difficult to gain support and commitment for these initiatives inside the agencies. A well-planned and purposeful change management strategy can help, but it still requires an understanding of the importance of content and knowledge management in the overall strategy. It may sound like a cliché, but if the leadership support and direction is not there, these types of efforts are very difficult to maintain for the long term.

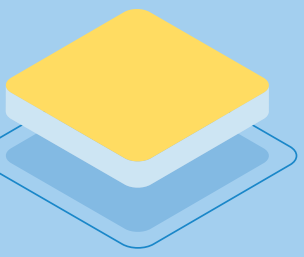
We Can Help

While federal agencies are dreaming about CX success, content-management savvy technical communicators can ground federal agencies in reality by:

- Explaining content's critical role in CX
- Offering governance plans that map out a realistic and achievable process to ensure timely, ongoing updates to content
- Helping them to understand the cost of maintenance, specifically around labor hours and the number and types of people necessary, so that funding is secured for ongoing work

Content is an indispensable part of the CX equation and agencies must treat it as equally important to the other components of CX. Otherwise, we're never going to hit that CX home run.

DR. LIZ HERMAN *(liz@lizherman.com) is an STC Associate Fellow and a presenter at STC's upcoming Virtual Summit. She has previously served as a Director on STC's Board of Directors and writes the occasional book review for STC's Journal* Technical Communication. *She grew up in Dubuque, Iowa, not far from Iowa's Field of Dreams and now calls Alexandria, Virginia home.*



Shifting Messaging for a Customer-Centric Experience

By DANIELLE FELDMAN KARR

THE "CUSTOMER-CENTRIC" BUSINESS model has been growing over the past decade as both a popular buzzword and a corporate philosophy. Companies that are successful at customer-centric messaging have a strong focus around building a brand that is inclusive and passionate about the uniqueness of each person that makes up their customer base. When the initial transaction is understood as only the beginning of a long-term relationship between the company and the customer, this relationship becomes the company's lifeblood—fostering an internal obsession for providing amazing customer experiences. Simply put, a customer-centric approach allows us to be more human in our messaging—and this model does more than make a company feel good.

Forbes writer Blake Morgan reported that brands that embody this customer-centric model bring in, on average, 5.7 times more revenue than their competitors. With messaging playing a large role in the development and fortification of this brand positioning, it is crucial for professional writers today to master the methods needed to achieve this experience-focused content style. Whether you write promotional materials at a tech company, white pages at a medical institution, in-app messages for a retail giant, technical manuals at a research facility, or newsletters for a non-profit, becoming a customer-centric writer means caring about your audience.

Although considering the audience is a foundational writing principle for all professional writers, this gem of a tenet has several facets. Knowing an audience can be different from understanding an audience, and understanding an audience can be different from caring for an audience—with each style having a remarkably different effect on the outcome of materials written. A customer-centric writing style takes on the challenge of *caring for* the audience. This means writers must not only put themselves in the shoes of their customers, but they must also become aware of their customers' values, knowledge, and interests. It becomes less about knowing an audience to persuade them and more about knowing an audience to become a better steward of their customer experience. A company-customer relationship that focuses on the customer nurtures a reciprocal bond of loyalty—the company cares for the customer and the customer is devoted to the company. This way of thinking challenges professional writers to have an outside-in (customer-centric) approach instead of an inside-out (company-centered) approach to their audience.

Outside-in vs. Inside-out Messaging Strategy

Traditional messaging starts with internal stakeholders amplifying what they think their product or service offers to the public, but an outside-in approach does the exact opposite. An outside-in messaging strategy listens to the audience and takes in what they are saying—or not saying—regarding the product or service and uses that input to set guidelines for all company messaging. The outside-in lens is possibly the hardest shift for a writer to facilitate in a company, but it can be accomplished through appropriate messaging research. I've found that often the audience has different priorities than what the company feels is the most valuable benefit of the product or service.

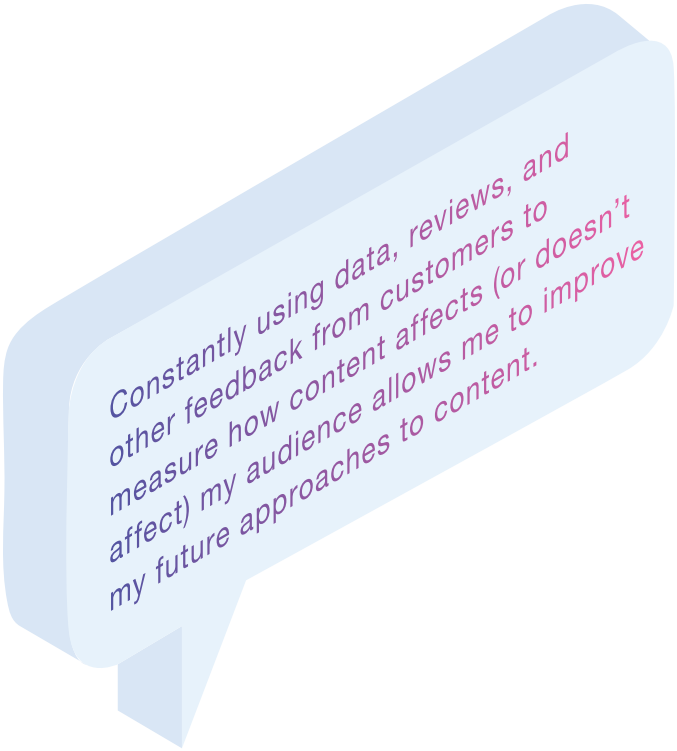
For example, when I started as a writer at my current smart home company, the ability to customize our technology was viewed by the company as the biggest benefit for potential customers. After circulating some demographic surveys, however, I discovered that a customizable home fell far down on the priority list for people looking into smart home technology; rather, potential customers were looking into technology to find ways to better connect with their home and family. "Customizable" had been the result of a company-centered, inside-out way of thinking, while focusing on connecting to home and family was the result of a customer-centric, outside-in methodology. This shift in awareness around the needs and desires of the customer changed the tone of our messaging to be driven by audience values rather than internal, corporate interests.

Outside-in Messaging is Good for Business

There might be an initial concern with shifting the messaging focus away from internal corporate interests. A customer-centric approach, however, is critical to the success of businesses today. Simon Sinek, a senior organizational consultant, explored why some companies cannot maintain success and attributed TiVo's fall from the spotlight to its poor marketing. More specifically, TiVo failed to resonate with audiences in a way that was meaningful to their needs and interests. Instead of connecting with the audience's values, TiVo told audiences what the company wanted them to know, excluding the critical, customer-centric "why" message in each communication.

In contrast, incredibly successful companies like Amazon and Apple use the exact opposite model for their public communications. The success of these customer-centric companies illustrates that content driven by the audience is not content devoid of strategy. Rather, these writers use the audience's "why" as guidance to create a positive customer experience. The values an audience shares with a company or organization, as well as the values they might develop on their journey with the company, become the core focus of content—weaving customer values into every document.

Essentially, writers who bring a customer-centric methodology to their content say through every document, "We care about what you care about, and here's why." These writers, and their companies, maintain their enduring success due, in part, to their extreme focus on maintaining the integrity of the customer experience. Their goal is to delight customers by sharing in their


Constantly using data, reviews, and other feedback from customers to measure how content affects (or doesn't affect) my audience allows me to improve my future approaches to content.

values, and the companies' communications, innovations, and processes are all developed through methods that center around caring for their audience.

Through applying a customer-centric framework to my own writing and editing practices, I've helped companies develop some of their most successful customer experiences regarding content. Surveying audiences for their values, concerns, and information needs helps to develop a more robust and complete picture of them that includes knowledge, interests, and sensitivities. For example, being attentive to an audience's desires and vulnerabilities informs me of how and what I should promote to our customers. Having accountability for how my content impacts the customer experience influences how I curate information for an audience. Constantly using data, reviews, and other feedback from customers to measure how content affects (or doesn't affect) my audience allows me to improve my future approaches to content. Insights such as these enable writers to do more than just create successful content and delightful customer experiences; these insights also equip writers with a genuine care for their audience to help writers empathetically navigate the gray areas of professional communications for a more positive customer interaction.

A customer-centric messaging style can be challenging to establish in a company that has long practiced an outside-in style. Every writer, however, can take some steps to begin shifting corporate messaging to a more outside-in approach. Here are three examples of how you can shift your company communication strategy to a more customer-centric framework.

Clear Out the Noise

My previous example—the company that promoted customizable technology when that was not actually a main audience interest—demonstrates why it is vitally important to take time as a writer to identify the "corporate noise" that persistently creeps into your customer-centric messaging. Like anyone, corporations have egos, and it can sometimes be hard for a company to produce content that "leaves ego at the door" to focus on the customer need.

Internal voices often drown out the needs of the audience, so writers must become seekers, as well as advocates, of the audience's voice. To be a successful customer-centric writer, you must embrace the customer's point of view. In this digital age, surveys and focus-group questions are efficient ways to seek out that perspective. These methods provide writers insight into what their audiences find valuable as content and provide a foundation of knowledge that writers can build upon to create messaging that will delight customers.

Another strategy for clearing out noise is to find out the origin and heart of a content request when discussing document strategy and direction with the requester. Even if the content is being driven by an internal voice (e.g., a new product launch), the writer can help keep the document's focus on the audience's wants or needs. This ensures the messaging is satisfying an external need rather than an internal assumption, shifting the content away from simply talking at the audience and toward engaging in a conversation with the audience.

Write (and Rewrite) with Care

Last year I watched a YouTube video that I will now forever connect with this principle. The video was of a father trying to teach his toddler son how to make a snow angel. He first showed the child how to make a snow angel by waving his own arms up and down as he stood in front of his son, and the child would mimic him correctly. When he laid his child in the snow, however, his son continued to wave his arms vertically (perpendicular) to the ground instead of parallel to it. After a quick laugh, the father then lovingly took the arms of his son and proceeded to move them for him in the correct motion to make a snow angel until the child understood the action on his own.

This story reminded me of the writer-audience relationship, as it demonstrated the importance of developing and maintaining an ongoing connection to the audience. Composing customer-centric content is never a single act, just as the father in the video did not show his child the proper motion and then walk away. Rather, he stayed by the child and adjusted his own method of information delivery when he realized

the message was not resonating with his son. This same process applies to customer-centric writing: Successful content is made and remade from endless cycles of caring writers listening to their audience, writing, listening some more, and then rewriting.

A good example of implementing this principle involves an email rewrite I was assigned. My team had worked with the email and service center teams to research what information was important for new customers following their security system purchase. After learning the top five information requests by customers, we set up an onboarding email campaign that contained all the needed information. We launched the campaign and reviewed the email analytics a month later. Upon examination of the click-through rates of links within the email (i.e. how many people who opened the email actually clicked on the links we provided), we realized that users were not clicking one particular link to an important document.

We revisited what we knew: This document was being requested by new customers daily via phone calls to our service center, so we knew that the information was needed. The email open rate was also high, demonstrating that the neither the email send itself, nor the subject line, were the issue. This led us to the realization that something in the email layout and reading experience must be the problem. The solution we implemented was to separate that document out from the main welcome email and send the document link in a separate email with more direct instructions. After implementing that change, we saw a significant increase in click-throughs and downloads in the new email—as well as a decrease in calls to the service center asking for the document.

Document the Change

Companies with writers who center their messages around the customer can experience a sharp increase in customer lifetime satisfaction and retention. However, these positive effects are directly connected to the authenticity and consistency of the company's customer-centric attitude. Writers must maintain more than a technical writing standard for this approach to be successful; they must develop and document how to create and maintain this customer-centric approach, so it becomes a repeatable standard of care within the company.

If a writer finds themselves in a company-centered environment, applying this lens change can be difficult. It is extremely important to remember that change often does not happen suddenly, and that documentation of content processes that produce a positive customer experience can help bring about lasting change that will weather turnover and reorgs. I always suggest to writers that after developing a successful customer-centric writing model, they should document their methods and guidelines in a company editorial style guide. While often treated as a simple glossary of terms, an editorial style guide can be an excellent place to record the methods that successfully shaped these new values and principles in order to help guide future document creation. Record the process for effective customer-centric content creation in addition to the technical standards of the company in order to maintain laser-focused messaging centered on the audience.

Start Building a Customer-Centric Style Today

Customer-centric messaging puts the audience's needs and interests at the center of every content decision—to the benefit of both the customer and the company. Companies successful with this messaging strategy invest heavily in building a culture focused around their customers, and their commitment to delivering great customer experiences is genuine. Becoming a truly customer-centric organization takes time, but you can begin the shift in your company today by:

- Listening to your audience
- Asking important questions about the customer, as well as the document itself
- Using audience feedback and data when reviewing and rewriting content
- Documenting your processes along the way

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Minimalism Revisited

An Interview with John Carroll

BY NICKY BLEIEL | *STC Fellow*

THIRTY YEARS AGO, a landmark book in the field of technical communication was published—*The Nurnberg Funnel: Designing Minimalist Instruction for Practical Computer Skill.* It introduced the concept of minimalism and established the author, John Carroll, as "The Father of Minimalism." In 2013, I had the honor of interviewing Dr. Carroll about *The Nurnberg Funnel* and its 1998 follow-up, *Minimalism Beyond the Nurnberg Funnel,* written by Professor Carroll, Hans van der Meij, JoAnn Hackos, Ginny Redish, David Farkas, and other luminaries. The convergence of the book's 30th anniversary—and this issue focusing on content in the customer experience—seemed like the perfect time to revisit our conversation about the past, present, and future of minimalism.

Dr. Carroll is currently a Distinguished Professor of Information Sciences and Technology at Penn State, as well as Director of Penn State's Center for Human-Computer Interaction. He is an Honorary Fellow of STC, which he was awarded in 2015. His citation reads: *For your lifelong contributions to technical communication through your research into human-computer interaction and the concept of minimalism in documentation, and for your dedication to teaching the next generation.*

Nicky Bleiel: Let's start at the beginning, Professor Carroll. Why did you embark on your original research in the '80s? At that time, you weren't in academia. You were an "IBMer."

John Carroll: Yeah. That's actually probably why I was inclined to do that. This, in the early '80s at IBM, was a time when the company was trying to expand into new markets. The IBM PC was in development. They had just brought out the Displaywriter, which was a microcomputing-based document-processing system, reaching out to much broader user groups. Users, usability, the whole HCI transformation was loose at IBM. I've often thought the decade of the '80s was the decade of the new user, because there was such a vast expansion. Not that it really has slowed down [laughs] with respect to computing, but it wasn't like that in the '70s. It was a professional area, and the issue was supporting computing and information professionals.

These problems of new users—problems of learning, problems of getting started—were "the" problems, because if you don't get started, all bets are off. There really isn't anything more to worry about. You haven't become a user. I don't like the term "user" anymore, but that was the term we used then.

NB: [laughs] The '80s, when you were working on all of this, was the time that everything transitioned from everyone who was involved in software being a developer, a high expert, into bringing it out to the people, so to speak.

JC: Right. Yeah. And there were waves of it. The first wave was computer hobbyists and clerical people, secretaries. Administrative assistants in today's parlance. And then office principals, that was the next wave. It was basically the computerization of the entire office, everyone, all the staff. That was a big wave after wave of new users and learners, and that's what drew us into this work. It was strategically critical for IBM. And as a young psychologist working at IBM, it was fascinating, because [laughs] it was actually a way to apply things I knew and had studied and was curious about to real needs of the business.

NB: That does sound like it would be fun. How do you describe Nurnberg Funnel minimalism, in a nutshell?

JC: Well, I think the metaphor of minimalism and, of course, the Nurnberg Funnel is this medieval legend—it's German—about The Funnel of Nurnberg, which made learning very easy. Basically you insert the funnel into somebody's head and pour knowledge in. It's an interesting metaphor. In some sense it's something we all would desperately like. Certainly somebody who is struggling with a computer system or application would like to be able to just pour the knowledge in and not have to struggle.

On the other hand, it's ironic in that our studies of learning, and other people's studies of learning, led us to a concept of the active learner, the active user. Meaning that people need to act, they need to be engaged, and that they need to struggle. That's not a bad thing. That's the way people learn.

Of course, just because you're struggling, that's not a good thing, but the right kind of struggle could lead to the right kind of outcome. The minimalist idea, the way I think of it, is to minimize the extent to which the system and the information get in the way of what the user's really interested in.

I think this is very consistent with the notion of minimalist design from the Bauhaus tradition. To try to bring function to the fore, chairs for sitting in fundamentally. It's not something to look at or contemplate. It's functional.

Similarly, a computer application is to do stuff with. Not to read the information, puzzle over the interface, get confused, and frustrated. That's not what it's about. That's what should be minimized. People should be on the course that they want to be on and relating to computer products the way they want to.

NB: I think that's an interesting way of putting it. More Bauhaus and less Louis XIV in design.

JC: Yes. Of course, the impulse to end up with Louis XIV, with decoration, and extras, and so forth, is something you always have to struggle against. You know, the old term "featuritis." Those of us who produce software, produce information. We're producing both the vehicle to make everything work right but also the obstacles. And we have to exert a certain amount of self-control, empathy, and of course, user testing [laughs] and other things like that, to make sure we don't lapse into decoration and obstacles.

Ten Misconceptions About Minimalism

Minimalism means brevity.

Minimalism means incomplete instructional analyses.

Minimalism means trial-and-error learning.

Minimalism does not support people who learn by reading.

Minimalism over-emphasizes errors.

Minimalism is just another word for job aids.

Minimalism only works for simple domains.

Minimalism merely reflects the preconceptions of users.

Minimalism offers a complete documentation solution.

Minimalism has no theoretical foundation.

From Minimalism Beyond the Nurnberg Funnel, 1998

NB: That's very true. Jumping back to something you touched on when we first started talking, there's been a bit of an argument in the tech-comm community about what we should call the people who consume our content. Everybody in software has always said "users," and some have suggested we say "customers." But in the book, you generally refer to them as "learners." Do you think that term is more appropriate and keeps us, as technical communicators, more on task?

JC: I do like the term "learner." "User" is passive, to me—you've been handed something, use it—whereas I think what people are doing is much more actively a matter of ownership and appropriation and coming to control a new tool in a new environment. And it is a matter of learning. It's a matter of problem-solving. Besides being cumbersomely long—you could call them "problem-solvers…."

I think that's accurate, too, but it's awkward. But also, it focuses on the performance, where "learners" focuses on the human development and appropriating new knowledge and skill, which I think is really more the essence of what's going on. But I think it's worth struggling a little bit with the terminology. [laughs] For years, I used "users" unquestioningly, and I finally realized I wasn't really comfortable with it, so I tend not to use it. In your question, you also suggested the term "customer," and I understand, in a commercial context, where that could be relevant, because there is a transaction going on in the background. There's a purchase. But again, as with "user," I think that's something I wouldn't want to overemphasize, because a customer can't buy skill and a customer can't buy a good user experience. They have to be a partner in that.

Actually, we have the same terminology thing in the university, in contemporary times, where some of our administrators urge us to think of our students as customers [laughs], which I think is just terrible. It's a terrible idea because, again, they can't buy an education, and calling them a customer conveys to them that they can, which, really, just technically, it's wrong. It's also the wrong attitude to take when you're a student or a person learning new skills and information in a professional context.

NB: It's true. What you call someone, how you label something, does matter, bottom line.

JC: Yes.

NB: Now, *The Nurnberg Funnel,* it pioneered so many of the best practices that technical communicators adhere to today. You could start with the concept that software documentation should be designed and it shouldn't simply be a list of menu items and dialog boxes. The concept that documentation should be modular, and support both sequential use and random access. That docs should be user-centered. Even the concept that "less is more." What do you think is the most important takeaway of *The Nurnberg Funnel*?

JC: Well, it's a fair question. I may end up wriggling out of it. I wanted to insert here just an acknowledgement. It fills me with delight that people still can find utility in this book after all the years that have passed. I never anticipated this, so it's just pure pleasure. It's fun to revisit the ideas and try to reconstruct things we were thinking of then and how they might be relevant now.

I think that the idea that documents must be designed is one part of minimalism in *The Nurnberg Funnel* that's very relevant today.

I do think that techniques like crowdsourcing and search have caused, what I think, is a radical position that there is no need to design information anymore because it's so abundant. We can rely on the crowd and search, and between the two we're going to be able to generate such wondrous amounts of information.

I'm drawn back to a very old statement by Herbert Simon that I think comes from the '60s where he said that in our age we have an abundance of information—that's true—but we have a poverty of attention. This, I think, was much in our minds, even in our early work, and I think it's a bigger problem now.

Online information is a huge resource and we do need to curate it. We do need to cultivate it, use it, and understand how people appropriate it, but we need to understand that people are overwhelmed by the amount of information.

Saying that the age of design is passed and now we can just rely on the Web and it will take care of things, I think, is just way more optimistic than I am. I think that information does need to be designed. Of course, we have to realize also we can't design all the information on the Web. That's loose and that is the new paradigm, so we do need to understand search. We need to integrate that into information strategies, but I don't think a way to get started is to point people to a Web browser and say, "You're on your own. There's plenty of information there." That's true and that's the problem.

NB: That's very, very true and it's something the profession has been struggling with and working on for many years. As you noted, that question started a lot earlier than a lot of us thought. Speaking of learning, in *The Nurnberg Funnel* you note that people learn by doing. This was an important concept. They learn by doing, not reading. For software, kinesthetic learning trumps visual and audio learning. This piece of minimalism is often overlooked. How does the research you and your colleagues did support this?

JC: I would say that the way our research supported it is through the studies we were doing, which were largely these rather intensive thinking-aloud studies of new users getting started with various IBM—mostly IBM—systems. We saw people resort to learning by doing almost immediately. Of course, the most vivid examples were people who would declare that they were systematic thinkers. They really liked to puzzle through things and

The Nurnberg Funnel
(Source: http://en.wikipedia.org/wiki/Nuremberg_Funnel)

they wouldn't be going off half-cocked and trying this and trying that. They were very systematic people.

Of course they weren't because learning by doing, I think, is really just a fundamental truth about learning. People need to act. We are, after all, talking about skill learning. We're not talking about pondering abstract concepts or definitions or conceptual information, declarative information. It's mostly skill learning and you learn skills by doing.

In terms of where the idea came from, I was talking about how we experienced it and observed it in our research, but it's an older idea that in my education and further reading you can trace back to various sources. I've gotten a lot of inspiration from reading John Dewey on this, but there are many other sources.

For example, Jean Piaget, the great developmental psychologist, talked about how people had to interact with things, see them, handle them, manipulate them, in order to develop their intellect. He had a series of stages in his model of intelligence.

I think it's a very widespread idea. In fact, I think this general idea of active learning is so pervasive there really aren't voices against it anymore.

I regard this as pretty much a settled issue. It was maybe just mildly controversial even in the '80s, but it's certainly not now.

NB: We know that this is how people learn. We know that we need to optimize for it. On the other hand, there's a greater and greater level of impatience when people need to learn software.

JC: Of course, that impatience is because they want to do things. What we tried to do in our work was work with that impatience. A lot of times a risk can be seen as a resource from a different perspective. If people are impatient that's energy. It's a goal. It's a desire, a direction. If you can guide that, if you can work with it, if you can direct it in a lightweight way and put more initiative, allow more initiative to the learner, you might get a better result. That's really what we were trying to do. And I think it's more possible to do today. In the 1980s, the idea of digital memory, integration of printers, even what printing was, these were all new concepts, and I find it hard to believe these same concepts are problematic in the least for anybody now.

So we're in an industry, we're in a region of human endeavor, where what's problematic is moving ahead so now there are concepts about the way that smartphone apps update, some of these are not concepts everybody shares, but those problems were not even … we couldn't even conceive of them.

And I think this pattern is likely to continue so that the problems that are vexing us today someday will be in the background, and there will be new ones.

NB: That's the good thing about problems, right? [laughs]

JC: Yeah.

NB: *The Nurnberg Funnel* was published in 1990, and you followed up in 1998 with *Beyond the Nurnberg Funnel*. How did you come to revisit minimalism eight years later?

JC: Well, in the intervening time—and, of course, when a book comes out in 1990 in those days it means you finished it in 1988. So in that intervening decade, I got to meet a lot of people, got to read more stuff, find out what other people were doing, and realized that what I was doing was just part of a larger zeitgeist of changing ways of thinking about information design, documentation, learning, various user interface designs, and so forth. And I was, with the help of the Society for Technical Communication, able to arrange a workshop at Virginia Tech—I can't remember exactly what year that was, maybe 1996—and invite a bunch of these people I had met in that decade, and they were all going in different directions, emphasizing different aspects.

I remember people were talking about using hypermedia to layer information to achieve minimalist designs where you could hide information unless people

requested it. Get it out of their way unless they actually chose to look at it, made that their path for looking at different kinds of applications. As I mentioned, I was working heavily on office information systems, and people were working on other things with similar approaches and so forth.

So that was how *Beyond the Nurnberg Funnel* came to be, and that book included the article on misconceptions about minimalism, because any idea that you try to develop, people are going to creatively interpret it, and that's an opportunity to refine the way it's presented.

NB: First of all, I'd like to say it's very cool that STC was involved with all of this. We're very proud of that, and I was going to ask you about the essay that you and Hans van der Meij wrote for that book. Minimalism is a hot topic right now—for lack of a better term—in tech comm, because it's considered essential for mobile outputs and documentation in general. But Nurnberg Funnel minimalism, to expand on your paper a little bit, it doesn't mean concise, necessarily, though I'm sure that you wouldn't dispute that conciseness and good editing is important. So if minimalism does not exactly mean brevity, how would you explain it?

JC: Well, I would say that brevity is more a consequence of minimalism than a principle of minimalism. If you go back to what I was saying earlier about trying to facilitate the learner's initiative and goals and aspirations and impede them less, you will most likely end up with a briefer design, or it might be layered. I was alluding earlier to David Farkas's contribution to minimalism in the book *Beyond the Nurnberg Funnel* which had to do with layered designs. This was a way in his work of getting the information design out of the learner's way, making the information layered so that it was available on demand, but not necessarily an impediment if the learner didn't choose to look at it at that time.

NB: Wow. That's a great explanation of that. That makes perfect sense.

In *Beyond the Nurnberg Funnel,* you note that minimalism is a combination of documentation and user interface improvements. Do you believe that technical communicators should get involved in user interface design and software usability, and if you do, how do you think they could work alongside user experience professionals without actually changing their profession and becoming user experience professionals?

JC: The second part of that is probably the more difficult part, but the first part is easy. I've always believed this, and I think the design of information and the design of the user interface started to really…. Again, if we rewind history here, when we started out books were the primary vehicle for information design, for technical communication, designing libraries, actual books. And that's just much less true now. Information started to move online, started to become integrated with user interfaces.

I think that the two interests were always very aligned and subject to a lot of the same processes. The way usability's articulated, the way we think about usability testing applies just the same to developing a book as it does to developing an interface. The interface is more interactive, and so it's more complex.

But once the information starts to go online, it's exactly the same. And not only that, it's embedded in the user interface, so I don't see how the two professions can really be separate. They're codependent, and the better and the more closely they're integrated would lead to a better process in which usability would be optimized generally throughout the design.

The other question you asked is how these two professional concerns—and they're often people who come from different professional preparations and maybe affiliate with different groups—how they can maintain their identity. That's a tricky question.

And I think it's valid, because these are different perspectives. The information and the user interface has been integrated to a considerable extent. The two perspectives are valid perspectives on that boundary object, that single thing that they're looking at from two different points of view.

But I think that is just problematic. Probably some information designers will over time become user interface designers, and maybe the converse, too. So there might be movement across that boundary. That probably wouldn't be a bad thing, either. I think that's an interesting dynamic in the whole system development process.

Of course, you could make similar arguments, or raise similar issues with respect to people who design functionality and people who design user interfaces and online information, right?

NB: True.

JC: There's been a long tradition of trying to separate architecturally the user interface from the functionality, but in general I wouldn't say this has been a howling success. I mean in very simple user interfaces it's doable. The Web, the early Web, was able to do it, but then as Web 2.0 is articulated, it's probably less true today than it used to be. I don't know. I think that all these professions end up interacting quite intimately, and people cross boundaries, and maybe that's just the way it's going to be.

NB: I like the term you use, "codependent." So we should all realize our codependency, because at the end of the day there's going to be better software and that's what we're interested in developing. That's what everybody on the team wants to do.

JC: The tensions, the perspective of an information designer, the perspective of a user-interface designer, the perspective of the software engineer, looking at the same thing from different ways, I think that could be a beneficial tension. Again, all conflict, all difference is not necessarily a problem. Sometimes it's a resource. [laughs]

NB: That's very true.

JC: If we could only collaborate with people who are exactly like us and have our values and our skills and our knowledge, it'd be a boring world.

NB: [laughs] Absolutely. We talked earlier about all the different options we have for online user assistance today. Of course, we still create manuals, but there are so many more options. We have embedded help. We have dynamic help. We have tool tips. We have videos. We have wizards.

We have all kinds of things going on to help the user and guide them along on their path. But minimalism strives to keep the documentation itself from obstructing the user. Do you think these options distract the user, or do you think they're just valid steps on the path to minimalism?

The Nurnberg Funnel Approach to Minimalism

Allow learners to start immediately on meaningfully realistic tasks.

Reduce the amount of reading and other passive activity in training.

Help to make errors and error recovery less traumatic and more pedagogically productive.

From The Nurnberg Funnel, *1990*

JC: I think they're both. I think that we have a much richer design palette today than we did in 1980, and that's got to be a good thing. On the other hand, to use your analogy earlier about the Louis XIV tendency, it raises that risk, because now the concept of what is a document set now is just totally open-ended. I mean, it could be a ton of information. It could require a dump truck. And that's probably not where we want to go. We certainly don't want to make that a prerequisite to doing anything. That would be exactly the wrong thing to do.

On the other hand, having a rich design palette makes the professional practices much more interesting, much more demanding. There's lots to know. There are lots of techniques to deploy, maybe a lot of more need for a kind of multimedia analog of layering, so that not everything is on the critical path, but it might be in the information space as an option.

But I think the goals of minimalism are still valid. I think people use tools to get things done, and one way we have to measure ourselves is the extent to which we facilitate that and make it make a very short and stimulating and effective path available to the person wanting to use the tool.

That said, we know that people often do not attain the level of expertise that would be good—even for their own goals—and so we need to think about ways to stimulate people to learn more and get better. Again, these challenges aren't new ones. They were there in 1982 also, and they're still here today. And as systems are more complex, more integrated, and more interesting, I think these challenges also get more complex and more interesting.

NB: Right. We want to support discovery learning, but we've given them a lot more to discover. [laughs]

JC: Right. That's not a bad thing. I mentioned at the beginning that I think maybe it's just a fact that learning involves some struggle, but I think that this can be very rewarding. I think people intrinsically want to be stimulated and learn things, and so if we do it right, really, we're not just doing our job, we're really enriching [laughs] the human experience, I think. I think people in computing and information technology have a great opportunity to contribute to that.

NB: I agree. It's a very noble goal, too. We talked about how all these options have increased and disciplines—we talk a lot about content strategy in tech comm now. So technical communicators, understandably, we're more technologically savvy and we're more process-oriented. But *The Nurnberg Funnel* focused quite a bit—and we've talked about this a lot today—on the psychology of learning.

Do you think that *The Nurnberg Funnel's* emphasis on learning theory is still valid? [laughs] I think you do. Technology and systems always change, but humans essentially don't change much at all, do they?

JC: Well, no. I guess my simplest answer is learning theory is still valid and, I think, provides a stimulating and a forceful and a useful perspective, and that's a continuing thing. Technology and systems are ever-changing. Let's call it "the human architecture" is unchanging, and that's the sense in which learning theory is a continuing resource for us, to us. But what is changing is prior knowledge and culture. What the humans bring to the kinds of situations we are designing for—that is changing—and that will continue to change.

So earlier I was alluding to our concerns back in the day with people trying to understand what it meant when a document was queued for printing. Well, that was really a fascinating challenge in 1980 but not so challenging today. Kids that are three or four understand that. [laughs] So that's simply not something we need to worry too much about.

On the other hand, there are many other problems that have come to take those problems' place. And so that's the sense in which the humans also are ever changing. Again, winding the clock back, one thing that really impressed me in 1980 was the IBM materials we were reviewing at that time did not treat the learners as … well, they didn't really treat them with respect. I mean

they didn't treat them as people that had a goal or that knew anything.

And when we worked with these people, we realized these people did have goals and they were experts, but they weren't experts with the Displaywriter or the IBM PC. They were experts in office work, and they knew a lot about work practices, and processes, and objectives, and quality standards, and they knew more than we did.

And we came to see that prior knowledge as an important resource that needed to be leveraged in the design of information, the design of training materials, and the design of user interfaces. And that basic strategy, I think, should be the operative one, but all of the specifics are different.

So the people today, just the people who walk off the street that are like your user, they know a lot about the Web, they know a lot about mobile phones. They use computers every day. They know about Facebook. I mean, there is lots of prior knowledge that we have to respect and that we have to use and leverage in our designs today, but it's all different knowledge.

So this, again, is the challenge of information design, and the fundamental problem that was addressed in, *The Nurnberg Funnel,* and why this profession is not going away. It can't go away. But it will always be changing.

NB: Right. So the tech-comm mantra of "know your user" is important in all phases of software design, in designing the information, in designing the interface, in designing the interaction, all of those things.

JC: Yes. I think a lot of times when people read that mantra, which has been around a long time—that must go back to the '70s, if not the '60s—but when you read that I think a lot of people say, "Ah, we're all human beings. What's the news there?" But we shouldn't take it at that high a level. It's true. We're all human beings, and our minds essentially work the same as people several thousand years ago, but our users are completely different than the users of 10 years ago. That's a thing we have to focus on when we say, "Know the user."

And that's changing … it's changing faster and faster, in fact, so that challenge is not just a "so what?" kind of challenge. It's really a very serious challenge, and it gets more demanding, I think, with time.

NB: You said in *Beyond the Nurnberg Funnel* that many challenges remain ahead—not just the one we just discussed about knowing users—and that you believe there can never be an end to the project of reconstructing minimalism; that it's constantly evolving. We have talked about the fact that software is ubiquitous, it's everywhere, and it's much more user-friendly than it used to be. Is there anything you could think of that you would tweak in your original description of minimalism?

JC: I think if I was going to write the book again I could write it better. [laughs] I think I'm a better writer now than I was 25 years ago. Aside from that, I think

Our users are completely different than the users of 10 years ago.

I'm going to stand pat with the basic ideas. Essentially, in what you're alluding to, I was predicting that things would change—of course that's an easy prediction, and I'd make it today too.

We've talked about some of that change. You rattled off the design palette for information designers today. That is a much richer design palette than what we were talking about, not just in 1980 but in the mid-'90s when we did *Beyond the Nurnberg Funnel.*

That's the sense in which the project of reconstructing minimalism is constantly evolving. Tools are all different. The point I was making a minute ago about the cultural context, the prior knowledge that we can assume and must leverage—and respect—in our users or learners, that's changing.

Of course, the applications. The most obvious thing would be mobility. In the mid-'90s there really wasn't any mobility to speak of. Not like today. The prospect now—with a billion smartphones already in use—the prospect today is that everybody is going to have a fairly advanced computer in their pocket all the time.

That's the world we're designing for right now. I think that's going to require minimalism in every sense, but it's a different kind of requirement than we were ever worrying about when we were thinking about desktop computing.

NB: Very true! You are a professor in the information sciences and technology college at Penn State, and I'd be remiss if I didn't ask what you're working on now, even if it isn't tech-comm specific.

JC: My work … of course. I don't think I work specifically on information design. These different professions and perspectives all converge—I think I encounter these issues every day in my work. Just to mention two things I'm doing. One thing I work on is educational technology. In terms of learners, if you're interested in learning and supporting learners with technology, becoming a professor is a good way to make sure you'll stay active.

Students both are able to benefit from and really expect technologically sophisticated tools, and I've been working with that in my teaching pretty much all the time I've been a professor, which is the last 20 years.

One thing I'm working on I call "collaborative information analysis." This is the scenario of law enforcement or intelligence professionals trying to make a theory of the crime, which may not have been committed yet, by analyzing a very large information

space. I've been doing this for about seven years, mostly with U.S. Navy support.

The interest in it is, of course, we realize we live in a world full of threats and those threats are hard to identify. There are large information spaces we need to analyze to try to identify hypotheses that would be theories of the crime or crimes. The way that you support that is by allowing people to abstract the information, but also by being able to get back to the original source and ground their hypotheses in the real data.

This involves visualizations and online sketching tools, social network analysis tools, lots of different kinds of tools that need to be integrated. Minimalism is a big issue here because it's easy to get overwhelmed. The model problem that I'm working on consists of 222 propositions. If you think about it, it's really easy to get lost in an information space that complex.

That's one thing I'm doing. It involves development of an integrated tool for information analysis and also studying team process where people try to work together to collaboratively analyze a complex information space.

The other project I'm working on is community technology. I've been interested for a number of years, really, in how information technology can strengthen community as an experience that people have.

Specifically, I'm interested in placed community, so I've worked with nonprofits, local government, schools, and so forth in a geographical area. Because I'm lazy, I guess, or because it's more fun to work where you live, I'm working now in the State College community with my own neighbors, in effect. There's just a huge number of interesting projects.

I think this work has a larger relevance because the idea of community, I think, is fundamentally important to being human. You can see from the explosion of online community and community-like experiences that people are striving for community. They want to participate in community. I think that technology can and does support that. That's the other focus of my work.

NB: Wow. That's really interesting and also a way that minimalism is coming full circle for you. It's coming back around. Cool.

JC: In these areas and other areas I've worked in, these ideas are still operative. They're very important. If information technology's going to be effective—across the whole host of things that people use it for—these orientations, I think, are critical to our success in the future.

NB: Thank you for that, and thank you for having this conversation with me today, Dr. Carroll. It was a privilege and an honor, and I learned a lot.

JC: Well, it's been fun for me, too. It's always fun to go down memory lane. I believe that the past is important to succeed in the future and it's fun for me to revisit that.

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John M. Carroll is Distinguished Professor of Information Sciences and Technology at the Pennsylvania State University. His research is in methods and theory in human-computer interaction, particularly as applied to Internet tools for collaborative learning and problem solving, and design of interactive information systems. Recent books include Making Use *(MIT, 2000),* Usability Engineering *(Morgan-Kaufmann, 2002, with M.B. Rosson),* Rationale-Based Software Engineering *(Springer, 2008, with J. Burge, R. McCall and I. Mistrik),* Learning in Communities *(Springer, 2009),* The Neighborhood in the Internet: Design Research Projects in Community Informatics *(Routledge, 2012),* Creativity and Rationale: Enhancing Human Experience by Design *(Springer, 2012), and* Innovative Practices in teaching Information Sciences and Technology *(Springer, 2014). Carroll serves on several advisory and editorial boards for journals, handbooks, and series. He is editor of the* Synthesis Lectures on Human-Centered Informatics. *Carroll has received the Rigo Award and the CHI Lifetime Achievement Award from ACM, the Silver Core Award from IFIP, the Goldsmith Award from IEEE, and an honorary doctorate in engineering from Universidad Carlos III de Madrid. He is a fellow of AAAS, ACM, IEEE, the Human Factors and Ergonomics Society, the Psychonomics Society, the Society for Technical Communication, and the Association for Psychological Science. In 2018, he received the Faculty Scholar Medal in Social and Behavioral Science from Penn State.*

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In Memoriam: Paul Stanley Kennedy

(22 January 1924 – 6 September 2019)

BY EDWARD MALONE | *STC Senior Member*

STC FELLOW PAUL S. Kennedy (Figure 1) died on September 6 at age 95. He was the last surviving member of the group that started the Society for Technical Communication in 1953.

Paul was a technical editor at Battelle Memorial Institute in Columbus, Ohio, when he joined the group of technical writers, editors, and librarians who were starting a national organization. Although he did not attend the April 1953 workshop in Washington DC, where the organizing effort began, he did attend the next meeting of the group in November 1953. At that meeting, he and other attendees paid a dollar in dues and signed a membership roster for the organization that would eventually become STC. Kennedy's name was first on the roster (Figure 2).

Among the papers that Paul donated to the archives at STC headquarters was a series of trip reports detailing his attendance at meetings in Washington DC, Cleveland, and New York City. These reports chronicle:

- The formation of the Association of Technical Writers and Editors (TWE) from 1953 to 1955
- The merger (Figure 3) of TWE and the Boston-based Society of Technical Writers (STW) to form the Society of Technical Writers and Editors (STWE) in 1957
- The merger of STWE and the Los Angeles-based Technical Publishing Society (TPS) to form the Society of Technical Writers and Publishers (STWP) in 1960

STWP would change its name to STC in 1971.

Figure 1. Paul Kennedy when he attained the rank of Fellow.

Paul and I exchanged about two dozen emails over a ten-month period in 2008. In that correspondence, he discussed his life and career and his work with STC.

A native of Michigan, Paul graduated from Mt. Pleasant High School in 1940 and enrolled at the University of Michigan as a chemical engineering major. His education was interrupted by the draft in January 1943. After completing chemical warfare training in Alabama, he shipped out to Africa, joining the 21st Chemical Decontamination Company in Algeria. He traveled through Tunisia and Sicily, stopping finally in Palermo, where he worked for some time as a clerical assistant at the Seventh Army's headquarters. Near the end of the war, he moved with the Seventh Army through war-torn France and Germany.

Paul returned home in late 1945 and soon resumed his studies at the University of Michigan. "A generous Sam enacted the G.I. Bill that let me return to my alma mater-to-be," he wrote. But he decided to change his major from chemical to metallurgical engineering. "Organic chemistry and I just could not get along." At about the same time, he married Norma Wood, and a year later, they had a son, Jonathan. Their marriage would last for 67 years, until her death in 2013.

With a degree in hand, Paul worked briefly for the Climax Engineering Company in Iowa and the Cadillac Division of General Motors in Detroit. In 1951, he began his nearly 40-year employment at Battelle, first as a metallurgist and then as an editor of "droves of reports from over forty research divisions embracing practically all of the physical sciences; seemingly countless numbers of pages across his desk annually and the consequent strain on his mental agility."

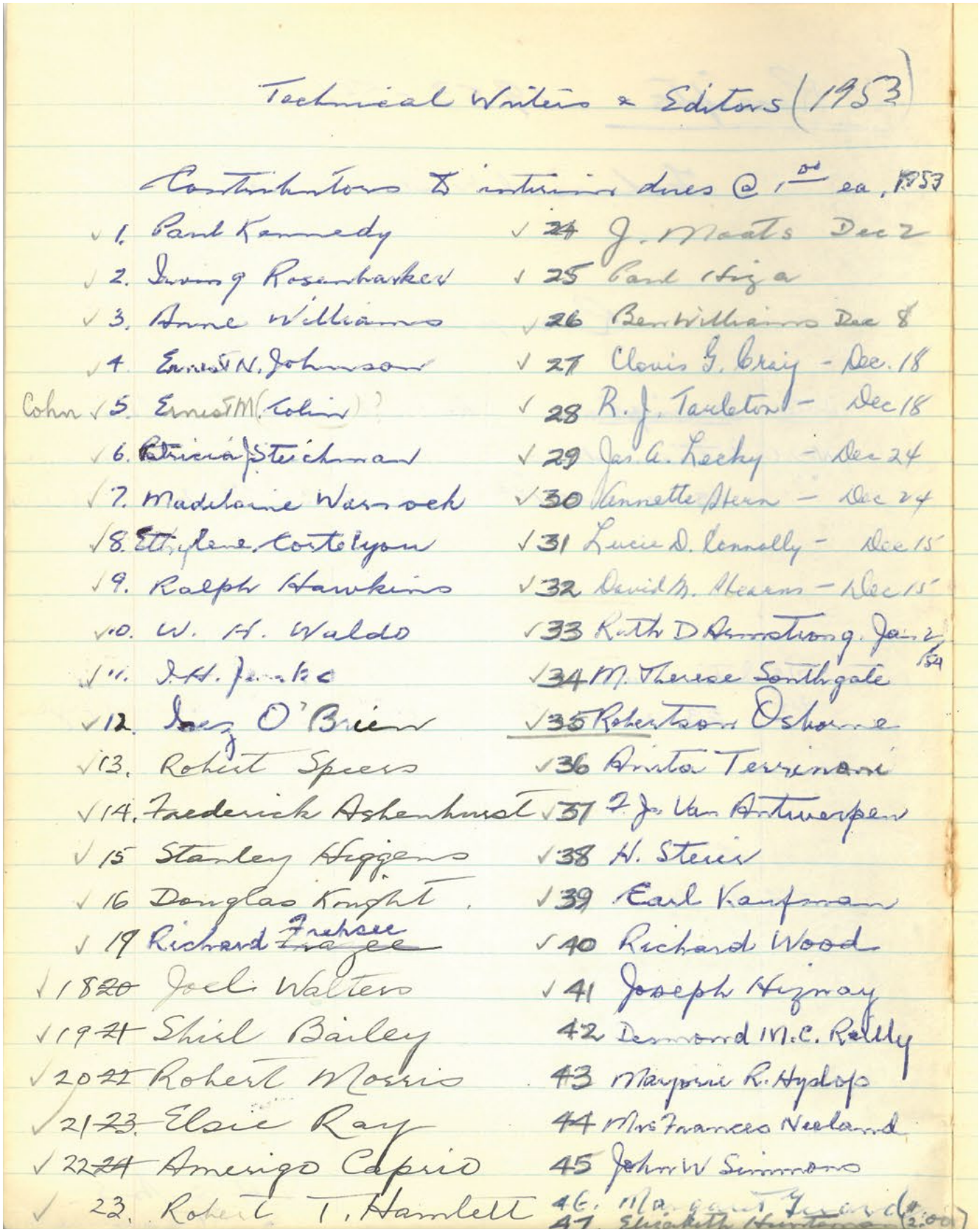
This challenging work drove him to seek fellowship with other technical writers and editors, and in 1953 he joined Elsie Ray, Henry Steier, and others in forming TWE. Over the next several years, Paul would help to form TWE's Central Ohio Chapter, represent TWE in its merger negotiations with STW, and serve as national Treasurer of both TWE and STWE. He was a member of the STWE Board of Directors when STWP was formed (Figure 4). His home in Columbus served as the national office of STWE/STWP from 1958 to 1966. His wife, Norma, was the society's first office manager. Elected a fellow of STWP in 1969, Paul remained active in STWP/STC for many years.

On the eve of STWE's merger with TPS in 1959, STWE president Irving Jenks summed up Paul's contributions as follows: "I well remember the very first meeting of the small group who founded the

Association of Technical Writers and Editors. Paul was there, and right from its inception, his contributions were invaluable. As year succeeded year, he was always among the small group of people who served very long hours and expended mightily of their efforts. He helped to solve almost every major problem that confronted the technical writing and editing movement in those days." i

Figure 3. The 1956 TWE and STW merger meeting.

Figure 4. The STWE Board of Directors, 1958-59.



Technical Writers & Editors (1953)

Contributors & interim dues @ 1.00 ea. 1953

1. Paul Kennedy
2. Irving Rosenbarker
3. Anne Williams
4. Ernest N. Johnson
5. Ernest M. (Colin) Cohn
6. Patricia Steichman
7. Madelaine Warnock
8. Ethylene Cortelyou
9. Ralph Hawkins
10. W. H. Waldo
11. J. H. Jenkins
12. Jay O'Brien
13. Robert Speers
14. Frederick Ashenhurst
15. Stanley Higgens
16. Douglas Knight
19. Richard Frahse
1820. Jack Walters
1921. Shirl Bailey
2022. Robert Morris
2123. Elsie Ray
2224. Amerigo Capria
23. Robert T. Hamlett
24. J. Meats Dec 2
25. Paul Hija
26. Ben Williams Dec 8
27. Clovis G. Craig - Dec. 18
28. R. J. Tarleton - Dec 18
29. Jas. A. Lecky - Dec 24
30. Kennette Stern - Dec 24
31. Lucie D. Connolly - Dec 15
32. David B. Stearns - Dec 15
33. Ruth D Armstrong Jan 2 54
34. M. Therese Southgate
35. Robertson Osborne
36. Arthur Terminiani
37. J. Van Antwerpen
38. H. Steiner
39. Earl Kaufman
40. Richard Wood
41. Joseph Hyman
42. Desmond M.C. Reilly
43. Marjorie R. Hyslop
44. Mrs Frances Neeland
45. John W Simmons
46. Margaret Ford (2.00)
47. Elizabeth Hunter

Figure 2. The original 1953 member list, signed by Paul Kennedy (#1).

Making Video Ubiquitous: Meet Wouter Maagdenberg

BY SCOTT ABEL | *STC Associate Fellow*

TECHNICAL COMMUNICATORS MUST be well-versed in a variety of disciplines in order to deliver the types of documentation experiences customers expect and desire. It's no longer sufficient to be a great writer. To provide value we must adapt and evolve our skillsets beyond knowledge of the written word.

Take video, for example. Cisco estimates that by 2022, online videos will make up more than 82% of all consumer internet traffic—15 times higher than it was in 2017! And while those consumer video traffic statistics are impressive, consider that 59% of executives say they would rather watch a video than read text.

These trends are one big reason why, in this month's installment of "Meet the Change Agents" column, I introduce you to Wouter Maagdenberg, a man on a mission to make "publish to video" as simple and ubiquitous as "save to PDF."

Scott: I'm always on the lookout for innovative and disruptive ideas that can help technical communication professionals improve the way we create, manage, and deliver content to those who need it. I was super-impressed when I learned about your idea to make "publish to video" as simple and ubiquitous as "save to PDF."

Before we learn more about that, tell our readers a little about yourself and your connection to the technical documentation industry.

Wouter: I started my career self-employed while in university, which evolved into running my first web agency. We specialized in servicing the music and sports industries and soon dealt with managing and publishing a lot of images and videos. In those early days of online video, we even started to stream live events, such as matches, races, and concerts. As a result, I started a separate activity to develop and reuse the needed technology. This was in the pre-YouTube and early social media era, and very limited bandwidth was available. Some time later, businesses started to become aware of the power and opportunity of rich media and video, so my company made a shift and became more enterprise focused. At one point, I decided to sell this media asset management technology firm to a bigger LSP/technology vendor for expected growth opportunity, and it led to my introduction to structured content.

I was impressed by the intelligence of structured content creation and management, but I was also a little bit disappointed by the limited output and publishing flavors, especially compared to the world I came from….and that made me think.

Scott: You founded a company called TXTOmedia that you hope will make *publish to video* as simple and ubiquitous as *save to PDF*. Briefly describe your company, and tell our readers what technical communication problems your firm solves.

Wouter: Yes, TXTOmedia (pronounced "text-to-media") rejuvenates the way enterprises purpose their structured content. Our technology enables these organizations to create, publish, and maintain rich-media-based publications—such as how-to videos—based on their existing structured content, in an automated way, and in most, if not all, languages in which their content is available. The real solution that we bring to the table, however, is to optimize search results to make it easier for audiences to find the information they require instantly, in a way that they like to consume it.

Consumers, as well as maintenance engineers, often say they prefer to watch a video over reading text. Search engines have noticed this trend and are increasingly serving up video answers to search queries. Video answers are convenient to consume, and they rank highly in search-engine results pages (SERPs). By adding video to existing multi-channel, customer support channels, audiences get what they want and deserve—high-quality, up-to-date instructions provided in a convenient format, in-sync with other support materials, and provided by the most trustworthy source: the brand that created the product.

Scott: An increasing number of technical communication organizations produce video documentation, instructional videos, and explainer videos, as well as product simulations and demonstrations. Production of video has increased dramatically since 2017, when only 11% of those we surveyed said they created video technical documentation. More recently, 66% of technical communication teams surveyed by The Content Wrangler in 2019 produce video documentation but only for some of their products. 19% of those surveyed say they craft video instructions for *all* of their products.

Survey respondents provide a variety of reasons for why they do, and don't, produce video documentation across their product lines.

One of the most common reasons cited was *appropriateness*. What type of technical documentation content is best suited to be automatically transformed from text to video?

Wouter: Procedures, frequently asked questions, and safety instructions work pretty well, in most cases. It's about providing to-the-point answers to everyday questions and problems in the native language of the consumer.

Scott: While I can imagine a variety of creative use cases for *publish to video* capability, I wonder if some of our readers might find it difficult to determine whether their content would make a good fit for this approach. What types of content are the perfect fit for publish to video?

Wouter: There are several options, such as animated and live action videos, but also HTML5-based interactive sliders, which are optimized for mobile use. Animated videos and interactive sliders that provide installation and maintenance instructions for tangible goods perform very well, both in the B2B and B2C arenas.

In this light, we see a lot of opportunity for improving the delivery of instructions associated with machinery, automotive, consumer goods, and electronics. For live action videos and sliders containing this content, the automated creation and localization of explainer or how-to video (or e-learning courses) can be mapped to specific elements of the existing documentation, allowing us to repurpose those components of content as soon as recorded video fragments are available.

Scott: I tend to think of TXTOmedia *publish to video* as a perfect fit for those technical documentation teams that document tangible products—physical items like consumer electronics, clothing, computer servers, airplanes, automobiles, medical devices, machines, or construction equipment.

Can you provide an example of how a company might publish instructions for assembly, maintenance, or repair from text to video?

Wouter: We typically connect our cloud-based TXTOmedia service to a component content management system (CCMS) and leverage procedural content produced in DITA XML or another structured format. The content most often contains text, images, metadata, and sometimes references to other rich media sources. TXTOmedia technology is set up to understand the relationships between those elements and is instructed to reuse and transform these elements in an audio-visual way.

Scott: There's no shortage of good ideas in the information development sector, but each of these new-and-improved ways of producing content usually require us to change how we work. What are the requirements for content that can be published automatically to video?

Wouter: Video is all about audio and images, right? So interesting video can only be automatically created by extracting images and text from procedural information. We leverage assistive technology (text-to-speech) to systematically transform text to audio, so a conversational way of writing text is required. Generating attractive and useful video automatically requires the source content to contain sufficient and appropriate images or video fragments for repurposing in the resulting clips. Images need not be created by expensive marketing and branding agencies, and video fragments need not be filmed in Hollywood-style. In order to be of value, images and video snippets must only be useful for the context, clear, and concise.

Technical writers become familiar with these new formats easily, and TXTOmedia also checks whether the media maturity of the content is right.

Scott: In order to help our readers understand what you've developed, tell us where TXTOmedia sits in a typical technical documentation technology stack. What types of hardware is required to run it? And is it a plug-in, a helper app, a platform, or something else?

Wouter: TXTOmedia is a 100%-SaaS offering. It's a platform, so there are no hardware requirements on the customer side. TXTOmedia works like a plug-in to your CCMS, or it can be connected via sFTP to provide speech-to-text and video-rendering capacities. TXTOmedia works similarly to third-party, PDF-generating technology.

Scott: What are some of the typical challenges that technical documentation teams must overcome when attempting to publish to video from existing legacy content? Are there some things about legacy content that might need to be adapted to make the whole process work as smoothly as possible?

Wouter: There are several common challenges. Sometimes we see beautifully structured content, but it lacks imagery, so there is a need to add illustrations to the source content prior to being able to automatically produce video output. At other times the way the text was written was not conducive to being read aloud, so it needs to be rewritten in a more conversational style.

Another typical challenge is learning to write in a topic-based manner, not in the traditional narrative style familiar to those accustomed to producing book-based content, like instruction manuals. To make automated video generation work seamlessly, we need to produce, for instance, safety instructions for each topic that can be reused only where needed, instead of published at the beginning of a user guide or technical manual.

Scott: I've heard you say that technical documentation teams can publish to video even if they don't produce DITA XML content. As XML provides additional metadata at a granular level, it's a perfect fit for

automatic transformation from text to video. But how does *publish to video* work with organizations that produce unstructured, non-XML content?

Wouter: It's best to start with structured, predictable content, but this can also be a form or template that is filled via third-party systems. Think of product information, digital assets, learning, and customer relationship management systems. Doing so allows us to deliver content for a variety of use cases, including eLearning, HR (helping employees to complete annual tax, insurance, and healthcare paperwork). It also allows us to leverage taxonomy and customer data to generate personalized videos on the fly.

Scott: How might *publish to video* help us personalize technical documentation experiences?

Wouter: When technical content is combined with customer data, automating the production of personalized, how-to videos is possible. If you know which customers use what products, we can combine this information and produce a video that is relevant and that explains the exact features required by the individual consumer being served.

Scott: While creating video documentation is seen as increasingly important by most technical communication professionals surveyed by The Content Wrangler, less than half of technical communication shops that currently create video documentation localize it. Among those that do, 47% localize *some* of their video documentation, while 23% adapt *all* of their video documentation. Nine percent say that they plan to do so in the future.

How might TXTOmedia *publish to video* help us localize technical documentation experiences?

Wouter: First, it is cheaper to create and maintain localized videos using our technology, and second, since companies often have already translated this content into the languages of all their markets. If the system understands the document structures in one language, it understands it in all the available languages.

Scott: What are some other use cases for *publish to video*?

Wouter: As well as making localized videos available for all products and topics, TXTOmedia also generates HTML5-based sliders at the same time, optimizing the mobile experience of instructions in online and offline environments. And how-to and explainer videos can be used by both customer service teams to support existing customers and the marketing team can use them to stimulate sales. Making these types of videos available to prospective customers prior to the purchase of a product helps them to make a decision.

Scott: Is there anything else you'd like to tell our readers about TXTOmedia's publish to video capability?

Wouter: I hope we take the hassle away around video creation, maintenance, and the associated costs so that people are less reluctant to start creating videos. I also hope that people understand that, like everything, you start small, optimize, and then scale the solution.

Scott: I'm afraid our time is up. Thanks for making time to share with our readers your innovative approach to creating video documentation automatically at scale. I appreciate your passion and dedication to providing examples that our readers can understand and put to work.

Wouter: Scott, thank you for taking the time to discuss what TXTOmedia does and what value we add to todays' businesses. If people want to learn more, or even test-drive our solution, we are open to providing a demo or to showing sample video based on their own content. My e-mail is wouter@txtomedia.com and our website is txtomedia.com.

Wouter Maagdenberg *(wouter@txtomedia.com)* started his career in 1996 with a specialized web agency for the media, music and sports industry in Amsterdam. He focused on streaming media and continued to develop rich media software. In 2011 he sold his technology company to SDL. Today Wouter focuses on the auto-creation of video and other rich media content. His company TXTOmedia delivers solutions to transform existing content into rich media such as animations and video for today's screens, AR, and VR.

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Productivity and Project Kickoff Tips for Success

BY CINDY CURRIE | *STC Fellow* and **KIT BROWN-HOEKSTRA** | *STC Fellow*

One of my goals this year is to improve my productivity. What recommendations do you have?

Build systems and habits that keep you on track even on the days when you are less motivated. Systems allow you to automate some of your more tedious tasks so that you can perform consistently with minimal effort—for example using direct deposit to your savings or automatic bill pay. Habits build behaviors that help you make consistent progress in your work or toward goals, for example laying out your clothes the night before, instituting a morning routine, or using the Pomodoro method to focus on tasks.

In *Atomic Habits*, James Clear provides a framework that helps you break behaviors into the smallest unit of effort and then build on those to create better systems and habits. The book includes worksheets and tools to help you track your progress. Over the long term, incrementally improving will get you further than trying to do everything at once. Incremental improvements allow you to see real, sustainable progress over time, especially if you are marking your successes. If you fail one day, it's easier to restart when you know that you are in it for the long haul. When you try to do everything at once, and inevitably have a bad day or fail, it's harder to restart.

A lot of productivity is changing your mindset and focusing on the right things. Make sure that your goals are SMARTER (specific, measurable, achievable, relevant, time-bound, evaluated, and rewarded).

When travel resumes sometime in the future, I anticipate that my company will need me to travel. What tips do you have for staying fit and productive on the road?

Traveling a lot, especially after the extended hiatus we are currently experiencing, can be hard on your body, mind, and social life. Developing travel routines will help you stay fit and productive. Here are some suggestions:

- Get a good suitcase that you can carry on and that has wheels.
- Set up a travel backpack or briefcase with extra charging cords, office supplies, extra USB drives, etc. Keep this stuff in your pack.
- Keep a supply of travel toiletries on hand and replenish after every trip.
- Look at your wardrobe and identify clothes that travel well, are easy to clean, mix and match well, and look professional. Include a set of workout clothes in your mix.
- Invest in noise canceling headphones, an eye mask, and compression socks or tights.
- Make yourself a pre-travel checklist to help you remember things to pack.
- Take $100 in emergency cash with you, especially if you are traveling internationally.
- Whenever possible, schedule your flights at least two weeks in advance. For long flights, consider using miles to upgrade your seat.
- On long flights, be sure to stand up, stretch, and walk around a few times.

- Fly in the day before whenever possible so that you don't have to rush to the meeting and can use the quiet time in the hotel to finish any last-minute preparation.
- Keep notes and lists of tasks, and use a planner (either online or paper). Spend time weekly to review tasks and prepare for the upcoming week.
- Schedule time each day to work on tasks, so that you continue to make progress and can pace yourself.
- Use flight time to catch up on your reading, meditation, or rest. Take advantage of the fact that people can't reach you. It does no good to push yourself to the point of exhaustion. Take time to recharge.
- At your destination, get settled, and then take yourself for a walk. Breathe some fresh air to clear your head from the trip.
- Spend time prioritizing action items and following up on contacts each day so that you stay organized.
- After your trip, unpack immediately, and put things away. Then complete your expense report. Make sure that you assign

action items and follow up with your team right away.
- Once everything is clean, put it where it's ready for the next trip.

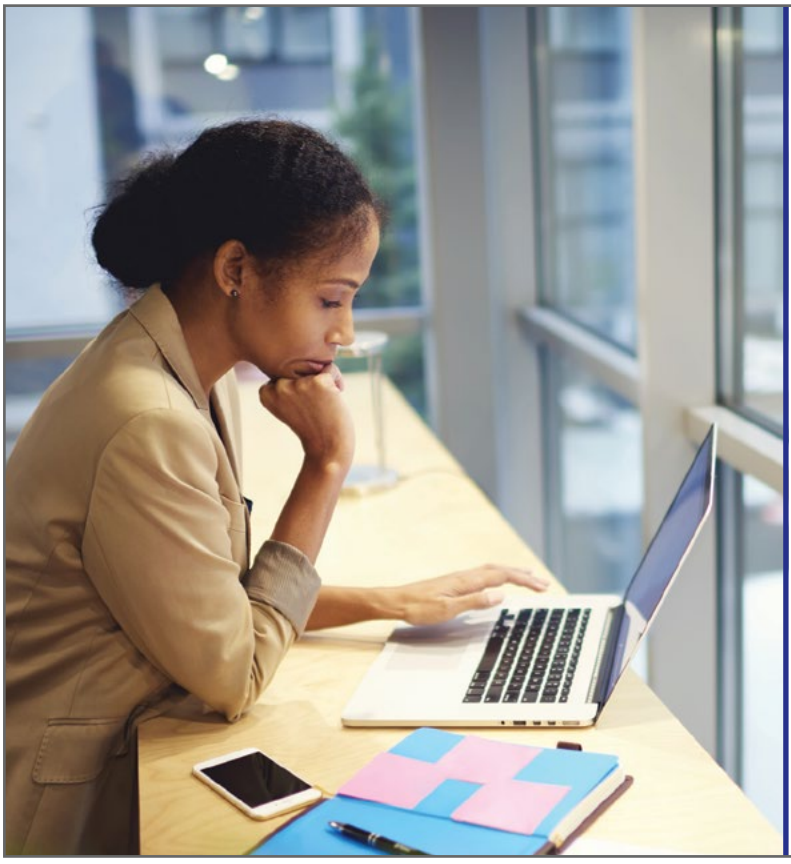
I'm planning my first kickoff meeting for a project, and I'm super nervous. What do you do to ensure the kickoff is a success?

The kickoff meeting sets the tone for the project, and helps the team get off on the right foot with each other. Spending time preparing will help to ensure that the project is successful.

- Identify which stakeholders should be in the meeting.
- Pre-meet with the project sponsor or owner so that you can ensure that you are aligned on scope, schedule, and goals. Depending on the project complexity, you might also need to meet informally with the core team to make sure you know their goals and pain points.
- Create an agenda, and ensure that the team is invited at least a week before the meeting.
- Cover these topics, minimum:
  - Introductions
  - Project background
  - Project purpose
  - Project scope
  - Project goals
  - Project management logistics
  - Expectations and communication
  - Next steps
  - Q&A

Your manager picked you to lead the project for a reason. Trust yourself and your team. Take this time to establish rapport, particularly if you will be working with each other remotely. ■

Ask a Tech Comm Manager is an advice column geared toward answering all those questions you have, but might be uncomfortable asking. We glean the questions from social media, forums, and most importantly, from you, dear reader. If we don't know an answer, we will interview experts and get information for you. Send us your questions to *kitbh.stc@gmail.com* or tweet them to *@kitcomgenesis* or the hashtag *#askTCmgr*.



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Breaking into Medical Communication

BY ANNA LEREW-PHILLIPS | *Guest Columnist*

MEDICAL COMMUNICATORS, such as writers, editors, and journalists, produce a variety of materials for different audiences, including:

- Healthcare journalists who produce newspaper, magazine, and web articles or documentaries, blog posts, and health segments for news shows
- Regulatory communicators who draft clinical protocols, new drug applications, documents for devices, and other submission documents
- Academic writers who compose grant applications, proposals for researchers at medical centers, and academic institutions, as well as academic papers and scientific journals

Furthermore, the prospects of employment look good based on certain trends.

- 2.5 million increase in scientific journal publication annually
- 28% increase in continuing education for healthcare professionals
- 1,567% increase in clinical trials from 2005 to 2016

These trends and other factors mean the demand for medical communicators to develop content is high.

Educational Backgrounds

Writers with humanities backgrounds might feel intimidated entering a field dominated by science. A humanities education, however, trains people to think, read, and write critically—skills considered core competencies of medical communication.

In other cases, individuals with scientific backgrounds make excellent medical writers, because as part of a particular professional audience, they can often communicate well with that audience. These people typically begin their careers as scientists, academics, physicians, pharmacists, and other healthcare professionals but decide to switch careers later. In the end, it is an interest in communication and a desire to work in the health and medical areas that are often central to moving into this field.

Essential Skill Sets

Regardless of educational background, all medical communications need to be able to:

- Think critically
- Write clearly and concisely for an audience
- Gather, analyze, interpret, and integrate scientific data
- Perform literature searches
- Simplify complex concepts
- Manage projects and schedules

One way to gain such skills is through focused training programs, such as the American Medical Writers (AMWA) certificate programs (for example, the Essential Skills Certificate Program). In other cases, you can take courses in communication programs at various educational institutions. The key is to find the program that offers training in the skills associated specifically with health and medical communication.

You can also join a professional organization to learn more about

this area. Organizations provide members with networking opportunities and educational resources needed to move into a particular area. The STC's Health and Medical Communication Special Interest Group, for example, has begun offering webinars and materials to help technical communicators move to medical communication. Other organizations, like AMWA, focus specifically on this area and provide similar resources for members.

Making the Move to Medical Communication

Making the move to medical communication looks different for everyone, but you can begin by:

Assessing abilities

First, assess your education, experience, background, and interests to determine whether all of these align. Some career paths will be undesirable or unrealistic, because the education, experience, and background do not line up with interests. For example, writers without direct knowledge of clinical trials will likely not find work in regulatory writing. Writers can use an entry-level position, however,

to learn about clinical trials and find opportunities to demonstrate their writing and editing skills for regulatory writing and thus work their way up to regulatory writing. Therefore, aligning education, experience, background, *and* interests is an essential step to finding the right job.

Revising resumes

Modify your resume and emphasize your writing experience. Avoid selling yourself short, and honestly evaluate your transferrable skills. This can yield hidden strengths and weaknesses that highlight what educational pathways you might take. Academics, for example, could show how their classroom management and committee meetings and projects can transfer over to "a team player with management experience."

Amass experience

Many new writers qualify for a job, but they lack minimum experience requirements. To address this situation, you try the following tactics.

- Write for yourself. Choose topics that interest and challenge you, set deadlines, and meet them. Knowing your writing process and understanding of how projects unfold helps foster needed time management skills before accepting work.
- Write for others. Use your network, and offer help to other writers—and ask for their feedback.
- Volunteer to write for the newsletters, blogs, or websites of non-profit organizations or advocacy groups. Many such organizations need experienced writers, but cannot pay them, so gaining experience with volunteer work is mutually beneficial.

A mix, or even one, of these strategies can help you to build experience and hone your skills.

Clarify objectives

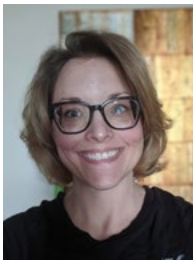
Finally, before making the move to medical writing, ask yourself:

- What area of medical communication do I want to work in?
- Do I want to write for a professional or public audience?
- Do I want to report about new drugs and medical devices or write the regulatory content for them?
- Do I want the independence of freelancing or the community of staff employment?

The more you understand your preferences, the better their outcome.

Final Thoughts

The topics and approaches discussed here can help you to make the move to medical writing. By understanding the field, you can make informed choices that can help you move into it more effectively.



ANNA LEREW-PHILLIPS (annalerew@gmail.com) *double majored in psychology and English for her undergraduate degree and earned her MA in English at Midwestern State University under the mentorship of Dr. Sally Henschel. Her psychology degree influenced her graduate work, especially independent studies in technical and medical communication, which culminated in her thesis, "Conceptual Metaphors in Direct-to-Consumer [Pharmaceutical] Advertising." Her other scholarly interests include the roles of verbal and non-verbal (i.e., body) language, gender, and age in advertising. She hopes to transition from academic to practitioner in 2020.*

This column provides information on trends, practices, and resources for applying technical communication skills in health and medical settings. Columnist Kirk St.Amant is the Eunice C. Williamson Chair in Technical Communication and a member of the Center for Biomedical Engineering and Rehabilitation Science (CBERS) at Louisiana Tech University. He is also an Adjunct Professor of Technical Communication with the University of Limerick in Ireland and a Guest Professor of Usability Studies with Southeast University in China. He contributes two columns ("The Cognitive Communicator" and the new "Health and Medical Communication") to STC's *Intercom* magazine and serves on *Intercom's* Editorial Board. Contact him at *kirk.stamant@gmail.com* to submit or pitch a column idea.

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Starry Night

BY TODD THALIMER | *STC Member*

I VIVIDLY REMEMBER the night that I first gazed into the heavens through a telescope. It was a cool spring evening in 1986 in Southern California. I had been eyeing my neighbor's giant Newtonian reflector telescope for a long time and was excited when he asked me to come over one evening and have a look. I was a teenager, and I was in love with all things "space." I often begged my parents to take me to the library so that I could check out books about the Saturn V rocket and anything by Arthur C. Clarke.

As knowledgeable as I was about space, nothing prepared me for the experience of looking through a telescope for the first time. My eyes quickly adapted, and I saw a field of stars illuminate the background. Then my heart skipped a beat as I saw it: Halley's Comet! I had seen lots of celestial objects in books, but actually seeing one with my own eyes made me weak. I was so excited that I vowed to one day have my own telescope.

It wasn't until a decade later that I was able to afford my first telescope. I saved every cent to buy one of the first computerized telescopes for the amateur home astronomer. This type of equipment made it easy for anyone to align a few stars and have the entire universe available. When I looked through my own telescope for the first time, I felt like I was back in 1986, again. I couldn't believe how pictures do not compare to seeing objects, live, through a telescope. I was gazing at Saturn, and the rings looked so crisp and bright.

As I advanced in the hobby of astronomy, my equipment got much more complex. I threw a get-together every year in my driveway—commonly called a star party (Figure 1)—where my friends would gather for the evening, and we'd look through the telescope. I had space-themed cocktails, trivia, and a food contest. My favorite part was having someone look through a telescope for the first time, and as I had done as a teen, feel the sense of wonder. It starts with a sigh as they see what's in the eyepiece. Then there's usually a gasp. They'll look at me as if to say, "That can't be real!" That never gets old.

Figure 1. A Star Party

Figure 2. The Horsehead Nebula

Over the years, I turned my love of astronomy into the technical field of astrophotography. It's a lot more than just hooking up a camera to a telescope and snapping a quick photo. The learning curve is steep and daunting, but I wanted to see those nebulae and galaxies that the human eye is incapable of resolving. Years later, I have accomplished my dream of capturing those pictures I saw on the sides of the telescope boxes—the images that seemed achievable to someone new to the hobby but are actually difficult to get. My holy grail picture was a good shot of the Horsehead Nebula (Figure 2), which I finally got after many evenings of careful work.

As my admiration for the heavens grew, so did my love of talking about the subject. I have used my technical communication skills to reach a much larger audience. I've been honored to speak about all sorts of subjects at schools, libraries, universities, and to social groups. My ability to take a complex topic and distill it to an easy-to-understand concept for anyone from the third grade on up has thrilled me. Still, the most rewarding thing for me is inspiring young kids that look through a telescope for the first time, hearing them gasp, and knowing that I've given them the gift of a much larger universe.

TODD THALIMER (todd.thalimer@gmail.com) *has been a technical communicator ever since his report on The History of NASA in seventh grade. As a software engineer for 20 years, he was often the proponent for documentation on every project. Several years ago, he dedicated his career to becoming a full-time technical communicator. He resides in Parker, Colorado with his daughter—who dreams of being an astronaut—and a very understanding wife, who keeps the bed warm until it's time to come in for the night. Todd also runs a successful outreach group for his observatory on Facebook.*

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STC Annual Summit	8
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